

**UNIVERSITY OF KANSAS, LAWRENCE,
JUNE 1, 1983. MISCELLANEOUS
PUBLICATION, NO. 74;
RELATIONSHIPS OF POCKET GOPHERS
OF THE GENUS GEOMYS FROM THE
CENTRAL AND NORTHERN GREAT PLAINS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649739950

University of Kansas, Lawrence, June 1, 1983. Miscellaneous Publication, No. 74; Relationships of Pocket Gophers of the Genus *Geomys* from the Central and Northern Great Plains by Lawrence R. Heaney & Robert M. Timm

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LAWRENCE R. HEANEY & ROBERT M. TIMM

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1983

UNIVERSITY OF KANSAS
JOURNAL OF NATURAL HISTORY

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from the Central and Northern Great Plains

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THE UNIVERSITY OF KANSAS
LAWRENCE
1983

UNIVERSITY OF KANSAS PUBLICATIONS, MUSEUM OF NATURAL HISTORY

Editor: Robert M. Mengel
Managing Editor: Joseph T. Collins

Miscellaneous Publication No. 74
pp. 1-59; 19 figures; 8 tables
Published June 1, 1983

MUSEUM OF NATURAL HISTORY
THE UNIVERSITY OF KANSAS
LAWRENCE, KANSAS 66045
U.S.A.

PRINTED BY
UNIVERSITY OF KANSAS PRINTING SERVICE
LAWRENCE, KANSAS

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INTRODUCTION

Pocket gophers have received much attention recently as models of the processes of genic differentiation and speciation because of their low vagility and high degree of local morphological differentiation (e.g., Patton and Yang, 1977; Patton and Feder, 1978, 1981; Patton *et al.*, 1979; Patton and Smith, 1981; Thaler, 1974). Evolutionary studies, such as those utilizing biochemical data, are based on the current taxonomy, which traditionally has been based on morphological studies. Unfortunately, the only comprehensive revision of Recent geomyids (Merriam, 1895), necessarily relied entirely on qualitative assessments of relationships of species and geographic variation within species, and has been outdated by numerous publications of more limited scope. Many of the studies on which the currently accepted taxonomy is based (see Hall, 1981) were restricted to small geographic areas, few taxa, and, all too often, small sample sizes.

In the course of studies of coevolution of pocket gophers of the genus *Geomys* and their lice (Timm, 1979), it became apparent that a comprehensive review of morphological variation and taxonomy of this genus, especially the widespread, diverse populations referred to the species *Geomys bursarius*, was much needed. We began such an investigation, and early in the study our attention focused on the northern and central portions of the area in which *G. bursarius* occurs, partly because of the obvious need for work, and partly because other studies were in progress in New Mexico, Oklahoma, and Texas (Baker and Genoways, 1975; Honeycutt and Schmidly, 1979; Tucker and Schmidly, 1981; Bohlin and Zimmerman, 1982). We have given special attention to the status of formerly recognized species that have more recently been relegated to subspecific status. We have not dealt with *Geomys pinetis* from the southeastern United States, or with the *G. are-*

narius/*G. personatus* group from Texas and adjacent areas.

History of Taxonomic Investigations

The first species of pocket gopher to be named in the Linnaean system was *Mus bursarius* Shaw, 1800, from "the interior of Canada." *Mus tuza* Ord, 1815, from the pine barrens near Augusta, Georgia, was the next species named; this name is now rejected as a *nomen dubium* (see Harper, 1952), but is an equivalent of *Geomys pinetis*. In 1817 Rafinesque described several new species of pocket gophers, proposed new names for the previously described species, and erected two new genera, *Geomys* and *Diplostoma*. Because the two species included in *Diplostoma* are now known to be junior synonyms of *Mus bursarius*, which Rafinesque included in the genus *Geomys*, *Diplostoma* is now considered to be a junior synonym of *Geomys*. Although some controversy remains over the species to which the name *Mus bursarius* was applied (see Merriam, 1895), current usage and relative certainty about the proper allocation of the name suggest that the name *bursarius* should continue to be applied as it has been since the mid-1800's.

The next valid genus to be proposed was *Thomomys* Wied-Neuwied, 1839, although several genera were proposed in the interim which are now considered to be synonyms of *Geomys*. Subsequent to 1839 and prior to 1895, gophers with grooved incisors were referred to *Geomys* or one of its synonyms, and gophers with ungrooved incisors were referred to *Thomomys*. Merriam (1895) named several new genera of gophers based on species previously assigned to *Geomys*. Although these genera have undergone taxonomic changes (Russell, 1968), the generic status of *Geomys* has been stable since that time. The following comments refer only to those taxa included in *Geomys* as currently defined.

Geomys breviceps was named by